

DOW CORNING CORPORATION
Material Safety Data Sheet

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Version: 4.0

Revision Date: 2007/11/07

DOW CORNING(R) 1-2577 LOW VOC CONFORMAL COATING**1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY**

Dow Corning Corporation
South Saginaw Road
Midland, Michigan 48686

24 Hour Emergency Telephone: (989) 496-5900

Customer Service: (989) 496-6000

Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No.: 02880806

Revision Date: 2007/11/07

Generic Description: Silicone resin solution.

Physical Form: Liquid

Color: Translucent

Odor: Some odor

NFPA Profile: Health 1 Flammability 3 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION**POTENTIAL HEALTH EFFECTS****Acute Effects**

Eye: Direct contact may cause mild irritation.

Skin: No significant irritation expected from a single short-term exposure.

Inhalation: Vapor may irritate nose and throat. Vapor overexposure may cause drowsiness.

Oral: Swallowing large amounts may cause drowsiness.

Prolonged/Repeated Exposure Effects

Skin: Repeated or prolonged contact may cause defatting and drying of skin which may result in skin irritation and dermatitis.

Inhalation: Product generates methyl alcohol which may cause blindness and damage to nervous system. Prolonged or repeated exposure by inhalation may injure internally. Overexposure by inhalation may injure the following organ(s): Nervous system. Kidneys. Liver.

Oral: Product generates methyl alcohol which may cause blindness and possibly death if swallowed. Repeated ingestion or swallowing large amounts may injure internally.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

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No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|---------------------------------------|
| 107-51-7 | > 60.0 | Octamethyltrisiloxane |
| 68952-93-2 | 30.0 - 60.0 | Dimethyl methylphenylmethoxy siloxane |
| 108-88-3 | 3.0 - 7.0 | Toluene |
| 1185-55-3 | 1.0 - 5.0 | Methyltrimethoxysilane |

The above components are hazardous as defined in 29 CFR 1910.1200.

4. FIRST AID MEASURES

| | |
|---------------------|--|
| Eye: | Immediately flush with water for 15 minutes. |
| Skin: | Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist. |
| Inhalation: | Remove to fresh air. Get immediate medical attention. |
| Oral: | Get medical attention. |
| Notes to Physician: | Treat according to person's condition and specifics of exposure. |

5. FIRE FIGHTING MEASURES

| | |
|-----------------------------|---|
| Flash Point: | 61 °F / 16.1 °C (Closed Cup) |
| Autoignition Temperature: | Not determined. |
| Flammability Limits in Air: | Not determined. |
| Extinguishing Media: | On large fires use AFFF alcohol compatible foam or water spray (fog). On small fires use AFFF alcohol compatible foam, CO2 or water spray (fog). Water can be used to cool fire exposed containers. |

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| | |
|-------------------------|---|
| Fire Fighting Measures: | Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool. |
| Unusual Fire Hazards: | Vapors are heavier than air and may travel to a source of ignition and flash back. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Fire burns more vigorously than would be expected. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|-----------------------|--|
| Containment/Clean up: | Remove possible ignition sources. Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements. |
|-----------------------|--|

Note: See section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Product evolves flammable methyl alcohol when exposed to water or humid air. Provide ventilation during use to control exposure within Section 8 guidelines or use air-supplied or self-contained breathing apparatus. Avoid eye contact. Avoid skin contact. Do not breathe vapor. Keep container closed. Do not take internally.

Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Keep container closed and away from heat, sparks, and flame. Keep container closed and store away from water or moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Component Exposure Limits**

| <u>CAS Number</u> | <u>Component Name</u> | <u>Exposure Limits</u> |
|-------------------|-----------------------|---------------------------------|
| 107-51-7 | Octamethyltrisiloxane | Dow Corning guide: TWA 200 ppm. |

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| | | |
|------------|---------------------------------------|---|
| 68952-93-2 | Dimethyl methylphenylmethoxy siloxane | See methyl alcohol comments. |
| 108-88-3 | Toluene | OSHA PEL (final rule): 8-Hour TWA 200 ppm, Ceiling 300 ppm, 10 minutes maximum duration 500 ppm. ACGIH TLV: TWA 20 ppm. |
| 1185-55-3 | Methyltrimethoxysilane | Dow Corning guide: TWA 50 ppm. Also see methyl alcohol comments. |

Methyl alcohol forms on contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 200 ppm and ACGIH TLV-skin: TWA 200 ppm, STEL 250 ppm.

Engineering Controls

| | |
|----------------------|--------------|
| Local Ventilation: | Recommended. |
| General Ventilation: | Recommended. |

Personal Protective Equipment for Routine Handling

| | |
|----------------------|---|
| Eyes: | Use proper protection - safety glasses as a minimum. |
| Skin: | Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended. |
| Suitable Gloves: | Butyl Rubber. Nitrile Rubber. Silver Shield(R). 4H(R). |
| Inhalation: | Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls. |
| Suitable Respirator: | General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. |

Personal Protective Equipment for Spills

| | |
|-------|--|
| Eyes: | Use full face respirator. |
| Skin: | Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended. |

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| | |
|---------------------------------|---|
| Inhalation/Suitable Respirator: | Respiratory protection recommended. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MHSA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection. |
| Precautionary Measures: | Avoid eye contact. Avoid skin contact. Do not breathe vapor. Keep container closed. Do not take internally. Use reasonable care. |
| Comments: | Product evolves flammable methyl alcohol when exposed to water or humid air. Provide ventilation during use to control exposure within Section 8 guidelines or use air-supplied or self-contained breathing apparatus. |

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions. For further information regarding aerosol inhalation toxicity, please refer to the guidance document regarding the use of silicone-based materials in aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Dow Corning customer service group.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------|------------------------------|
| Physical Form: | Liquid |
| Color: | Translucent |
| Odor: | Some odor |
| Specific Gravity @ 25°C: | 0.88 |
| Viscosity: | 1000 cSt |
| Freezing/Melting Point: | Not determined. |
| Boiling Point: | 101 °C |
| Vapor Pressure @ 25°C: | Not determined. |
| Vapor Density: | Not determined. |
| Solubility in Water: | Not determined. |
| pH: | Not determined. |
| Volatile Content: | Not determined. |
| Flash Point: | 61 °F / 16.1 °C (Closed Cup) |
| Autoignition Temperature: | Not determined. |
| Flammability Limits in Air: | Not determined. |

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

10. STABILITY AND REACTIVITY

| | |
|---------------------------|--|
| Chemical Stability: | Stable. |
| Hazardous Polymerization: | Hazardous polymerization will not occur. |

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Conditions to Avoid: None.

Materials to Avoid: Oxidizing material can cause a reaction. Water, moisture, or humid air can cause hazardous vapors to form as described in Section 8.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Metal oxides. Formaldehyde. Silicon dioxide.

11. TOXICOLOGICAL INFORMATION**Component Toxicology Information**

This material contains methyltrimethoxysilane (MTMS). MTMS was evaluated in a combined repeated-dose toxicity study that included screening tests for reproductive and developmental toxicity (OECD 422). Sprague-Dawley rats were treated (oral route, corn oil as carrier) daily at dose levels of 0, 50, 250, and 1000 mg MTMS/kg body weight. Test article effects on organ weight were limited to increased liver weight for both males and females in the top two dose levels. Histomorphological findings included increased hepatocellular hypertrophy (both sexes) and increased periportal vacuolation (females only) in the top two dose levels. Thymus weight was decreased in males in the top two dose groups. The thymus appeared normal histomorphologically. Other test article related histomorphological changes included increased incidence of thyroid follicular cell hyperplasia/hypertrophy and severity in males and females in the top two dose levels. There was also an increased incidence of hyperplasia/hypertrophy, apoptosis, and lymphocytic infiltration in the zona reticularis of the adrenal glands in high-dose females and acanthocytosis in high-dose males and females. Clinical pathology evaluations demonstrated a marked prolongation in prothrombin time for males in the top two dose levels. Marked elevation in blood platelet count was observed in both males and females at the high dose. Serum total protein was elevated in high-dose males and in females from the top two dose levels. Serum total cholesterol was elevated in females from the top two dose levels. There were no test article related effects on any of the reproductive and developmental endpoints. Because this study is considered to be a screening of repeated-dose and reproductive/developmental toxicity, the results do not provide sufficient information needed to interpret potential relevance to human health and are not indicative of a specific toxicity. This type of study is commonly used as a screening study to determine whether further testing should be conducted. Also, this study was conducted via the oral route of exposure, which is not a typical route of exposure for either manufacturing or end use applications of MTMS. A longer-term study by a more relevant route of exposure (inhalation) is being conducted to understand these preliminary findings.

A 14-day whole-body inhalation toxicity study of methyltrimethoxysilane (MTMS) in Sprague-Dawley rats (5 males / 5 females per group) was conducted in preparation of dose level selection for a 90-day repeated dose toxicity study. Sprague-Dawley rats were treated six hours per day for 14 consecutive days to exposure levels of 0 (control), 400, 800, 4000 and 8000 ppm MTMS. Signs of excessive urine staining and bloody urine were present following the first or second day of exposure in animals from 4000 and 8000 ppm exposure groups. All animals from the 8000 ppm exposure group and three animals from the 4000 ppm group were euthanized prior to scheduled terminal sacrifice. The primary gross pathology findings in these animals consisted of urinary bladder and kidney effects. Urinary bladder findings included dilation, calculi, abnormal contents and color. Kidney findings included mild to moderate dilation. Additional findings in females from the 4000 ppm exposure group included enlarged adrenal glands, small thymus and a mild gaseous intestinal tract. The relevance of these findings to human health is unknown. Additional testing (90-day repeated dose) is

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being conducted to better understand these findings.

Toxicology studies with laboratory animals and occupational evaluations with humans have found limited evidence of birth defects, low birth weights and delayed growth in offspring resulting from repeated exposures to toluene during pregnancy.

Special Hazard Information on Components**Reproductive Effects**

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
| 108-88-3 | 3.0 - 7.0 | Toluene |

Evidence of reproductive effects in humans.

12. ECOLOGICAL INFORMATION**Environmental Fate and Distribution**

Complete information is not yet available.

Environmental Effects

Complete information is not yet available.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

Ecotoxicity Classification Criteria

| Hazard Parameters (LC50 or EC50) | High | Medium | Low |
|----------------------------------|-------|------------------|-------|
| Acute Aquatic Toxicity (mg/L) | <=1 | >1 and <=100 | >100 |
| Acute Terrestrial Toxicity | <=100 | >100 and <= 2000 | >2000 |

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONS**RCRA Hazard Class (40 CFR 261)**

When a decision is made to discard this material, as received, is it classified as a hazardous waste? Yes

Characteristic Waste:

Ignitable: D001

State or local laws may impose additional regulatory requirements regarding disposal. Call (989) 496-6315, if additional

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information is required.

14. TRANSPORT INFORMATION**DOT Road Shipment Information (49 CFR 172.101)**

Proper Shipping Name: Flammable liquids, n.o.s.

Hazard Technical Name: Octamethyltrisiloxane / Toluene

Hazard Class: 3

UN/NA Number: UN 1993

Packing Group: II

Hazard Label(s): Flammable Liquid

Ocean Shipment (IMDG)

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.

Hazard Technical Name: Octamethyltrisiloxane / Toluene

Hazard Class: 3

UN/NA Number: UN 1993

Packing Group: II

Hazard Label(s): flammable liquid

Air Shipment (IATA)

Proper Shipping Name: Flammable liquid, n.o.s.

Hazard Technical Name: Octamethyltrisiloxane / Toluene

Hazard Class: 3

UN/NA Number: UN 1993

Packing Group: II

Hazard Class: Flammable Liquid

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

DOW CORNING(R) 1-2577 LOW VOC CONFORMAL COATING**15. REGULATORY INFORMATION**

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings**Section 302 Extremely Hazardous Substances (40 CFR 355):**

None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
| 108-88-3 | 3.0 | Toluene |

Section 311/312 Hazard Class (40 CFR 370):

Acute: Yes
Chronic: Yes
Fire: Yes
Pressure: No
Reactive: No

Section 313 Toxic Chemicals (40 CFR 372):

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
| 108-88-3 | 3.0 | Toluene |

Note: Chemicals are listed under the 313 Toxic Chemicals section only if they meet or exceed a reporting threshold.

Supplemental State Compliance Information**California**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
| 108-88-3 | 3.0 - 7.0 | Toluene |

Developmental toxin.

Massachusetts

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
|-------------------|-------------|-----------------------|

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108-88-3 3.0 - 7.0 Toluene

New Jersey

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
|-------------------|-------------|-----------------------|

| | | |
|----------|--------|-----------------------|
| 107-51-7 | > 60.0 | Octamethyltrisiloxane |
|----------|--------|-----------------------|

| | | |
|------------|-------------|---------------------------------------|
| 68952-93-2 | 30.0 - 60.0 | Dimethyl methylphenylmethoxy siloxane |
|------------|-------------|---------------------------------------|

| | | |
|----------|-----------|---------|
| 108-88-3 | 3.0 - 7.0 | Toluene |
|----------|-----------|---------|

| | | |
|-----------|-----------|------------------------|
| 1185-55-3 | 1.0 - 5.0 | Methyltrimethoxysilane |
|-----------|-----------|------------------------|

Pennsylvania

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
|-------------------|-------------|-----------------------|

| | | |
|----------|--------|-----------------------|
| 107-51-7 | > 60.0 | Octamethyltrisiloxane |
|----------|--------|-----------------------|

| | | |
|------------|-------------|---------------------------------------|
| 68952-93-2 | 30.0 - 60.0 | Dimethyl methylphenylmethoxy siloxane |
|------------|-------------|---------------------------------------|

| | | |
|----------|-----------|---------|
| 108-88-3 | 3.0 - 7.0 | Toluene |
|----------|-----------|---------|

16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

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